

Express Mail No.: EV529782996US
International Application No.: PCT/CA03/000864
International Filing Date: June 11, 2003
Preliminary Amendment

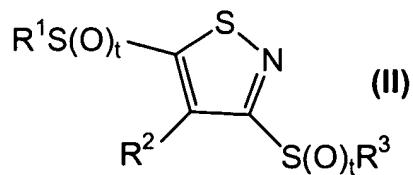
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 14. (Canceled)

15. (Original) A pharmaceutical composition useful in treating cancer or inflammation in a human, wherein the pharmaceutical composition comprises a pharmaceutically acceptable carrier, diluent or excipient and a compound of formula (II):



wherein:

each t is independently 0, 1 or 2;

R¹ and R³ are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl, -R⁴-N=N-O-R⁵, -N(R⁶)₂ or heterocyclalkyl;

R² is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, nitro, -R⁴-N=N-O-R⁵, -OR⁶, -C(O)OR⁶, -N(R⁶)₂, -C(O)N(R⁶)₂, -N(R⁶)C(O)OR⁵, -N(R⁶)C(O)N(R⁶)₂, heterocycl or heterocyclalkyl;

R⁴ is a bond or a straight or branched alkylene or alkenylene chain;

each R⁵ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

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each R⁶ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

provided that when t is 0 and R¹ and R³ are both methyl, R² can not be -C(O)OH, -C(O)NH₂, carboxymethyl or unsubstituted phenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

16. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-15 Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is alkyl or alkenyl.

17. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-15 Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

18. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-15 Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

19. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-15 Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is haloalkyl, haloalkenyl, haloalkoxyalkyl or haloalkoxyalkenyl.

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20. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-15~~ Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is -R⁴-N=N-O-R⁵.

21. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-15~~ Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is -N(R⁶)₂.

22. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-15~~ Claim 15 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is heterocyclalkyl.

23. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is hydrogen, alkyl or alkenyl.

24. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

25. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

26. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is halo, haloalkyl or haloalkenyl.

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27. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is nitro or -R⁴-N=N-O-R⁵.

28. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is -OR⁶.

29. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is -C(O)OR⁶.

30. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is -N(R⁶)₂.

31. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is -C(O)N(R⁶)₂ or -N(R⁶)C(O)OR⁵.

32. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-22~~ Claim 15 wherein the R² substituent of the compound of formula (I) ~~or the compound of~~ formula (II) is heterocyclyl or heterocyclylalkyl.

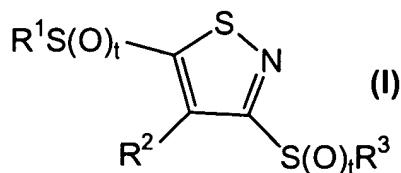
33. (Currently amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-32~~ Claim 15 wherein t is 0.

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34. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-32 Claim 15 wherein t is 1.

35. (Currently amended) The ~~use or~~ pharmaceutical composition of any one of Claims 1-32 Claim 15 wherein t is 2.

36. (Currently amended) A method of treating cancer, inflammation or a hyperproliferative disorder in a mammal, which method comprises administering to the mammal in need thereof a therapeutically effective amount of a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

R¹ and R³ are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl, -R⁴-N=N-O-R⁵, -N(R⁶)₂ or heterocyclalkyl;

R² is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro, -R⁴-N=N-O-R⁵, -OR⁶, -C(O)OR⁶, -N(R⁶)₂, -C(O)N(R⁶)₂, -N(R⁶)C(O)OR⁵, -N(R⁶)C(O)N(R⁶)₂, heterocycl or heterocyclalkyl;

R⁴ is a bond or a straight or branched alkylene or alkenylene chain;

each R⁵ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each R⁶ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

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as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

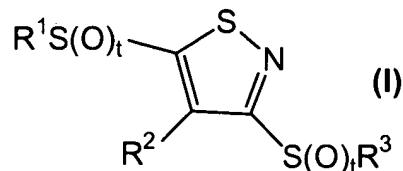
37. (Canceled)

38. (Currently amended) The method according to ~~any one of~~ Claim 36 or 37 wherein the cancer, or inflammation or hyperproliferative disorder is associated with hyperproliferation or tissue remodelling or repair.

39. (Currently amended) The method according to ~~any one of~~ Claim 36 or 37 wherein the cancer, or inflammation or hyperproliferative disorder is associated with the activity of PTPN12.

40. (Canceled)

41. (Original) A method of treating a mammal having a disorder or condition associated with hyperproliferation and tissue remodelling or repair, wherein said method comprises administering to the mammal having the disorder or condition a therapeutically effective amount of a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

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R¹ and R³ are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl, -R⁴-N=N-O-R⁵, -N(R⁶)₂ or heterocyclalkyl;

R² is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro, -R⁴-N=N-O-R⁵, -OR⁶, -C(O)OR⁶, -N(R⁶)₂, -C(O)N(R⁶)₂, -N(R⁶)C(O)OR⁵, -N(R⁶)C(O)N(R⁶)₂, heterocycl or heterocyclalkyl;

R⁴ is a bond or a straight or branched alkylene or alkenylene chain;

each R⁵ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each R⁶ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

42. (Currently amended) The method according to ~~any one of Claims 36-41~~ Claim 41 wherein the mammal is a human.

43. (Original) A method of treating a mammalian cell with a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

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R¹ and R³ are each independently alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, haloalkyl, haloalkenyl, haloalkoxyalkyl, haloalkoxyalkenyl, -R⁴-N=N-O-R⁵, -N(R⁶)₂ or heterocyclalkyl;

R² is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, halo, haloalkyl, haloalkenyl, cyano, nitro, -R⁴-N=N-O-R⁵, -OR⁶, -C(O)OR⁶, -N(R⁶)₂, -C(O)N(R⁶)₂, -N(R⁶)C(O)OR⁵, -N(R⁶)C(O)N(R⁶)₂, heterocycl or heterocyclalkyl;

R⁴ is a bond or a straight or branched alkylene or alkenylene chain;

each R⁵ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl; and

each R⁶ is independently hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof,

wherein the method comprises administering the compound of formula (I) to a mammalian cell and the compound of formula (I) is capable of inhibiting the activity of PTPN12 within the mammalian cell.

44. (Original) The method of Claim 43 wherein the mammalian cell is treated *in vitro*.

45. (Original) The method of Claim 43 wherein the mammalian cell is treated *in vivo*.

46. (Original) The method of Claim 43 wherein the inhibition of activity results in a reduction of cell adhesion.

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47. (Original) The method of Claim 43 wherein the inhibition of activity results in a reduction of cell division.

48. (Original) The method of Claim 43, wherein the inhibition of activity results in a reduction of cell migration.

49. (Currently Amended) The method of ~~Claims~~ Claim 43, wherein the inhibition of activity results in control of tumor growth.

50. (Currently Amended) The method of ~~Claims~~ Claim 43 wherein the inhibition of activity results in control of lymphocyte activation.

51. (Currently amended) The method of ~~any one of Claims 36-50~~ Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is alkyl or alkenyl.

52. (Currently amended) The method of ~~any one of Claims 36-50~~ Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

53. (Currently amended) The method of ~~any one of Claims 36-50~~ Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

54. (Currently amended) The method of ~~any one of Claims 36-50~~ Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is haloalkyl, haloalkenyl, haloalkoxyalkyl or haloalkoxyalkenyl.

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55. (Currently amended) The method of ~~any one of Claims 36-50~~
Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is -R⁴-N=N-O-R⁵.

56. (Currently amended) The method of ~~any one of Claims 36-50~~
Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is -N(R⁶)₂.

57. (Currently amended) The method of ~~any one of Claims 36-50~~
Claim 36 wherein the R¹ substituent of the compound of formula (I) or the compound of formula (II) is heterocyclalkyl.

58. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is hydrogen, alkyl or alkenyl.

59. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is aryl, aralkyl or aralkenyl.

60. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is cycloalkyl, cycloalkylalkyl or cycloalkylalkenyl.

61. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is halo, haloalkyl or haloalkenyl.

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62. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is nitro or -R⁴-N=N-O-R⁵.

63. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is -OR⁶.

64. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is -C(O)OR⁶.

65. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is -N(R⁶)₂.

66. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is -C(O)N(R⁶)₂ or -N(R⁶)C(O)OR⁵.

67. (Currently amended) The method of ~~any one of Claims 36-57~~
Claim 36 wherein the R² substituent of the compound of formula (I) or the compound of formula (II) is heterocyclyl or heterocyclylalkyl.

68. (Currently amended) The method of ~~any one of Claims 36-67~~
Claim 36 wherein t is 0.

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69. (Currently amended) The method of ~~any one of Claims 36-67~~
Claim 36 wherein t is 1.

70. (Currently amended) The method of ~~any one of Claims 36-67~~
Claim 36 wherein t is 2.